

Remarks

Reconsideration of the application is requested in view of the correcting amendments above and comments which follow.

Turning first to the Examiner's objection to claims 32 and 48, those claims have been corrected to remove the word "and" as requested by the Examiner.

In the Office Action, the Examiner now rejects independent claims 32 and 48 under 35 U.S.C. § 103(a) as being unpatentable over Endo in view of Wolf and newly-cited King U.S. Patent No. 6,122,398. Reconsideration is requested.

As far as newly-cited King is concerned, applicants do not believe that King is of relevance. It is submitted that the Examiner has set forward an incomplete and unsupported rejection.

In the paragraph bridging pages 3 and 4 of the action, the Examiner acknowledges that the amended claims filed with applicants' previous response now have two main features of distinction over the main reference, Endo (US 2002/0097490):

1. The requirement for applicants' control means to include a state machine controller having a state counter, a state memory and a duration down counter which receives a clock signal, and which is adapted to control the scanning system, the excitation light source and the image capture device so that, for each image to be formed at the image capture device, light from the specimen is only incident on the image capture device for a specific time period equal to that required by the scanning system to scan the area of interest n times where n is a whole number greater than or equal to 1.

2. The requirement that the host computer is arranged to supply state data to the state machine controller.

However, the Examiner continues to cite Wolf (US 4,972,258) in much the same terms as in the previous Office Action as making the first distinction obvious. Applicants disagree.

The response of August 9, 2010 included some discussion of Wolf, but did not go into detail, partly because Wolf is long and technically complex and partly because applicants were, at that stage, volunteering further claim limitation, introducing distinction 2 above, that applicants felt rendered any discussion of Wolf to be moot. However, applicants now expand upon their discussion of Wolf and

explain more fully why this is not a relevant reference insofar as the claimed invention is concerned.

Just so that there is no misunderstanding, while Wolf is a pertinent reference insofar as its technology is concerned, it is simply irrelevant insofar as the claimed invention is concerned. No inference should be made that because the applicants discussed Wolf little in the previous response that somehow Wolf is relevant to the claimed invention. It is not.

In the present invention the state machine controller controls the scanning system, the excitation light source and the image capture device in a very precisely synchronized manner in response to signals from a state counter. Thus all of these components are controlled by the state machine controller.

Wolf concerns a scanning laser microscope arrangement for examination of an object 70. The Wolf arrangement is quite complex, and includes two separate optical systems. In the main optical system, a photodetector 90 detects light from a first light source 22 (Figure 1, columns 5 to 7). In the second subsystem, light from a second light source 98 is used to provide information on the position of the light beam in the first system for control purposes. The second subsystem is described generally at column 7 line 57 to column 9 line 6. The second system includes a frame storage control module 140, represented in Figure 2 and shown in more detail in Figures 9 and 10 and described, e.g. in columns 21 to 23. Module 140 uses clock signals and counters to process signals relating to the position of the scanning beam of the first system to provide information to control computer 86. Module 140 forms only one element of the control arrangement of the Wolf equipment.

It is important to understand that module 140 does not control the excitation light source (laser 22) and the image capture device (photodetector 90).

This is entirely different from the present invention, where the state machine controller governs and coordinates the timing of the scanning system, excitation light source and image capture device, so that these are all very precisely regulated and mutually synchronized, as explained in applicants' previous response.

For these reasons applicants submit that the Examiner's view that Wolf renders obvious the first distinction over Endo discussed above is clearly in error.

Turning now to the second distinction, newly cited US 6,122,396 (King) does not seem of relevance.

King concerns a fluorescence microscope for examining stained micro-organisms, which includes a computer 10 for controlling various components, particularly illumination subsystem 20, imaging subsystem 30, optical subsystem 40 and mechanical subsystem 50, as illustrated schematically in Figure 1. Figure 1 shows the flow of information from the computer 10 to the various subsystems, represented by arrowheads, and in some cases there are additional arrowheads which presumably represent flow of information back to the computer. The Examiner has not referred to any particular passages of King but simply refers generally to Figure 1 and columns 5 to 8 as disclosing computer control with feedback.

Applicants do not see the relevance of King to the present invention. King is not concerned with improving timing coordination of a confocal scanning microscope. The control arrangement of King is not in any way comparable to the control arrangement of the present application: King does not use control means comprising a host computer and a state machine controller. Consequently, there is no disclosure in King of an arrangement in which the host computer is arranged to supply state data to the state machine controller. The two way flow of information seemingly disclosed in King is completely irrelevant in this connection.

This feature of the present invention is not concerned with feedback. Instead, it involves the supply of state data from the host computer to the state machine controller. The reasons for this and benefits resulting therefrom are explained in applicants' previous response.

A simple graphic representation of differences between applicants' arrangement and King is attached. It is hoped that this may be of assistance. The differences are clear and substantial.

Plainly, King would not lead a skilled reader of Endo and Wolf to the claimed invention as alleged by the Examiner. The Examiner's assertion on page 5 that modifying Endo and Wolf "by using a twoways connection" somehow arrives at the claimed control means in which a state machine controller steps components through a sequence of coordinated states defined in data received from a computer simply does not add up.

Furthermore, Endo and Wolf have very different architectures and their teachings are not compatible. It would not be a simple matter to combine the systems of Endo and Wolf as the Examiner has suggested. In any event, such combination would not result in the present invention. There is simply no teaching of

a state machine controller controlling the scanning system, the excitation light source and the image capture device in the manner specified in the claims of the present application. There is also no teaching of control means including a host computer supplying state data to a state machine controller.

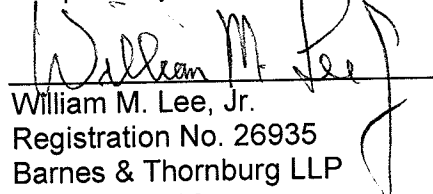
Applicants therefore challenge the assertion that one skilled in the art would even consider combining the teachings of the three references Endo, Wolf and King. However, even if the teachings of these three references were combined they would not produce the arrangement as presently claimed.

The applicants therefore again assert that independent claims 32 and 48 distinguish from the prior art and are allowable thereover. As the remaining claims depend from either claim 32 or 48, those claims are submitted to be allowable, as well. However, should any matters remain for consideration, the Examiner is urged to telephone the undersigned so that an interview can be arranged to resolve such issues and move the application forward to allowance.

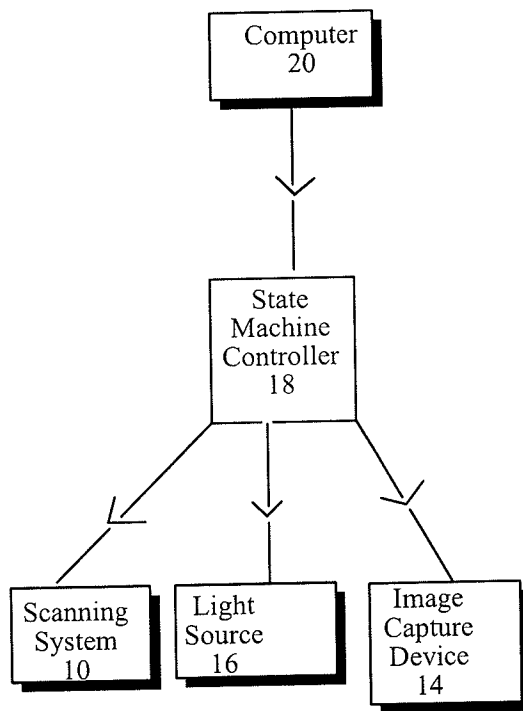
The Examiner's further and favorable reconsideration of the application is therefore urged.

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Present application



King

